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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,465

12/27/2005

Takashi Azuma

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03/26/2007

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EXAMINER

WEI, YAN-ZHEN

ART UNIT

PAPER NUMBER

3768

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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31 DAYS

03/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/562,465

Applicant(s)

AZUMA ET AL.

Examiner

Yan Wei

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-8 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

2. Group A: claims 1, 2 and 5-7.

Claims 1-2 are drawn to an ultrasonic imaging device comprising a transmitting beam former, a receiving beam former, a probe and a control unit that has a program for synthesizing B-mode image data of the scanned object imaged from a plurality of angular directions against the scanned object and displaying the synthesized image, Computes correlation between the received ultrasonic beams for frames imaged from the plurality of angular directions, and determines according to a result of the computation for the correlation whether envelop detection for the received ultrasonic beam should be executed after the image synthesis is carried out using the RF signals or the image synthesis should be carried out by using absolute value signals after the

envelop detection. The control unit with the above function will be referred as Control Unit A hereafter.

Claims 5-7 are drawn to the imaging graphic method of using the device as specified in claims 1-2.

3. Group B: claim 3

Claim 3 is drawn to an ultrasonic imaging device comprising a transmitting beam former, a receiving beam former, a probe and a control unit having a program for synthesizing B-mode image data of the scanned object imaged from a plurality of angular directions against the scanned object and displaying the synthesized image, computing correlation between the received ultrasonic beams for frames imaged from the plurality of angular directions, selecting a reference frequency for heterodyne detection for the received ultrasonic beam according to a result of the computation of the correlation, and setting the reference frequency to a value equal to a central frequency of the ultrasonic pulse signals when the correlation value is equal to a pre-specified value. The control unit with the above function will be referred as Control Unit B hereafter.

4. Group C: claims 4 and 8.

Claim 4 is drawn to an ultrasonic imaging device comprising a transmitting beam former, a receiving beam former, a probe and a control unit that has a program for synthesizing B-mode image data of the scanned object imaged from a plurality of angular directions against the scanned object and displaying the synthesized image, executes heterodyne detection for the received ultrasonic beams for the frames imaged from the plurality of different angular directions at a specified reference frequency which is set according to an operation previously carried out by a user. The control unit with the above function will be referred as Control Unit C hereafter.

Claim 8 is drawn to the imaging graphic method of using the device as specified in claims 4.

5. The inventions listed as Groups A, B and C do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reason:

Group A includes the special technical features, the Control Unit A and its related imaging graphic method, that are not included in the other groups.

Group B includes the special technical feature, the Control Unit B, that is not included in the other groups.

Group C includes the special technical features, the Control Unit C and its related imaging graphic method, that are not included in the other groups.

Furthermore, the transmitting beam former, receiving beam former and probe associated with an ultrasonic imaging device are not considered as special technical features since they are deemed prior art as evidenced by Li (See numerals 104, 116, 106, in combination with 102 in Fig.1 of Li, respectively).

6. A telephone call was made to Melvin Kraus at (703) 312-6600 on March 20, 2007 to request an oral election to the above restriction requirement, but did not result in an election being made.

7. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.


Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yan Wei whose telephone number is (571) 272-5356. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on (571) 272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

yw


ELENI MANTIS-MERCADER
SPE 3768